I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING DEPOSITED WITH THE UNITED STATES POSTAL SERVICE WITH SUFFICIENT POSTAGE AS FIRST CLASS MAIL IN AN ENVELOPE ADDRESSED

SSISTANT COMMISSIONER FOR PATENTS, P.O. BOX 1430, ALEXANDRIA, VA 22313-1450

BETH JOHNSON

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

oplication of: Renyuan GAO et al.

Serial No.: 10/045,317

: Group Art Unit: 2874

Filed:

7 November 2001

: Examiner: Sung H. Pak

For: POLYMER OPTICAL WAVEGUIDES ON:

POLYMER SUBSTRATES

: Attorney Docket No.: PHX-0038

#### PETITION TO AMEND INVENTORSHIP

Applicants hereby petition to amend the inventorship of the above-referenced application ("the application") to add the name of Anthony F. Garito, a true co-inventor of the invention claimed in the application, whose name was inadvertently omitted at the time of filing the application. An affidavit by Anthony F. Garito, attesting to his role in inventorship, as well as a Supplemental Declaration from the other five (5) co-inventors, attesting to Mr. Garito's role in inventorship, are enclosed herewith. Pursuant to 37 C.F.R. 1.17(i), a check in the amount of 130.00 is enclosed.

Also enclosed, please find a written consent of the current assignee, Photon-X, LLC, to the addition of Mr. Garito as a co-inventor.

Applicant respectfully request grant of this petition and amendment of inventorship.

08/24/2004 BSAYASI1 00000045 10045317

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130.00 OP

Customer No. 33941

Respectfully Submitted,

Renyuan GAO et al.

Joseph E. Maenner

Reg. No. 41,964

Monte & McGraw, P.C.

4092 Skippack Pike P.O. Box 650

Skippack, PA 19474

Telephone: 610-584-9400

Facsimile: 610-584-9783

E-Mail: jmaenner@montemgraw.com

PPESTAL SERVICE WITH SUFFICIENT POSTAGE AS FIRST CLASS MAIL IN AN ENVELOPE ADDRESSED TO: ASSISTANT COMMISSIONER FOR PATENTS, P.O. BOX 1430, ALEXANDRIA, VA 22313-1450 ON BETH JOHNSON

MAIL STOP: PETITIONS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Attorney Docket No.: PHX-0038

#### STATEMENT OF NEWLY ADDED INVENTOR

1. I, Anthony F. Garito, am a co-inventor of the above-captioned patent application ("the application").

- 2. Through clerical error, and without deceptive intent, I was inadvertently omitted as an inventor at the time of original filing of the application.
- 3. My contribution to the application consists of contributing subject matter to present claims 1-6, 8-15, 17-24 and 26.
- 4. I declare that the statements herein are true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine, or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent resulting therefrom.

\_\_\_\_\_*622004*-Date

te

Anthony F. Garito



## SUPPLEMENTAL DECLARATION AND POWER OF ATTORNEY

(Original Application)

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

#### **Polymer Optical Waveguides on Polymer Substrates**

the specification of which is attached hereto and/or was filed on <u>7 November 2001</u> as Application No. <u>10/045,317</u>. I agree that all named inventors are in fact true inventors and are properly listed as such.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to herein.

I acknowledge the duty to disclose information which is material to patentability in accordance with Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d), of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

|          |           |                        | Priority Claimed [] Yes [] No |
|----------|-----------|------------------------|-------------------------------|
| (Number) | (Country) | (Day/month/year filed) |                               |
|          |           |                        | [] Yes [] No                  |
| (Number) | (Country) | (Day/month/year filed) |                               |

#### PROVISIONAL PRIORITY PATENT APPLICATION(S)

|                   |               | Priority Claimed |
|-------------------|---------------|------------------|
| <del>-</del>      |               | [] Yes [] No     |
| (Application No.) | (Filing Date) |                  |
|                   |               | [] Yes [] No     |
| (Application No.) | (Filing Date) |                  |

And I hereby appoint Joseph E. Maenner, Esquire, Registration No. 41,964, as my attorney or agent with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith.

Address all correspondence to Joseph E. Maenner, Esquire, Monte & McGraw, P.C., P.O. Box 650, 4092 Skippack Pike, Skippack, Pennsylvania 19474. Please direct all communications and telephone calls to Joseph E. Maenner at 610-584-9400.

| inventor, if any                      | Renyuan Gao                                   |
|---------------------------------------|---|
| Inventor's Signature                  | "Seac Dr                                      |
| Date                                  | 2/25/04                                       |
| Residence                             | Downingtown, Pennsylvania 19335               |
| Citizenship                           | People's Republic of China                    |
| Post Office Address                   | 214 Montpelier Drive, Downingtown, PA 19335   |
| Full name of second inventor, if any  | joint  Donald S. Bitting                      |
| Inventor's Signature                  |   |
| Date                                  |   |
| Residence                             | Reading, Pennsylvania 19607                   |
| Citizenship                           | United States of America                      |
| Post Office Address                   | 37 Rim View Lane, Reading, Pennsylvania 19607 |
| Full name of third joinventor, if any | int Robert M. Mininni                         |
| Inventor's Signature                  |   |
| Date                                  |   |
| Residence                             | New Hope, Pennsylvania, 18938                 |
| Citizenship                           | United States of America                      |
| Post Office Address                   | 3161 Creamery Road, New Hope, PA 18938        |

| Full name of fourth j inventor, if any  | oint  Robert A. Norwood  |
|---|--|
| Inventor's Signature                    |  |
| Date                                    |  |
| Residence                               | West Chester, Pennsylvania 19380                                       |
| Citizenship                             | United States of America   |
| Post Office Address                     | 114 Waterwillow Road, West Chester, Pennsylvania 19380                 |
| Full name of fifth joi inventor, if any | nt<br>Kazuya Takayama  |
| Inventor's Signature                    |  |
| Date                                    |  |
| Residence                               | Iwaki, FUKUSHIMA 971-8146, JAPAN                                       |
| Citizenship                             | Japan  |
| Post Office Address                     | 23-11 Kakizkai, Miyo, Kashima-mati, Iwaki, FUKUSHIMA 971-8146<br>JAPAN |
| Full name of sixth joinventor, if any   | nt Anthony F. Garito   |
| Inventor's Signature                    |  |
| Date                                    | ·  |
|   | Radnor, Pennsylvania 19087   |
| Citizenship                             | United States of America   |
| Post Office Address                     | 103 Rock Rose Lane, Radnor, Pennsylvania 19087                         |



Attorney Docket No. PHX-0038

# SUPPLEMENTAL DECLARATION AND POWER OF ATTORNEY (Original Application)

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

Polymer Optical Waveguides on Polymer Substrates the specification of which is attached hereto and/or was filed on 7 November 2001 as Application No. 10/045.317. I agree that all named inventors are in fact true inventors and are properly listed as such.

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| (Number) | (Country) | (Day/month/year filed) | Priority Claimed [] Yes [] No |
|----------|-----------|------------------------|-------------------------------|
| (Number) | (Country) | (Day/month/year filed) | [] Yes [] No                  |

#### PROVISIONAL PRIORITY PATENT APPLICATION(S)

|                   |               | Priority Claimed |
|-------------------|---------------|------------------|
| (Application No.) | (Filing Date) | [] Yes [] No     |
| (4. ); .; .; .;   |               | [] Yes [] No     |
| (Application No.) | (Filing Date) | · · · ·          |

And I hereby appoint Joseph E. Maenner, Esquire, Registration No. 41,964, as my attorney or agent with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith.

Address all correspondence to Joseph E. Maenner, Esquire, Monte & McGraw, P.C., P.O. Box 450, 4092 Skippack Pike, Skippack, Pennsylvania 19474. Please direct all communications and telephone calls to Joseph E. Maenner at 610-584-9400.

| Full name of sole inventor, if any       | Renyuan Gao                                   |   |
|--|---|---|
| Inventor's Signature                     |   |   |
|  |   |   |
|  | Downingtown, Pennsylvania 19335               |   |
|  | People's Republic of China                    |   |
| Post Office Address                      |   |   |
| Full name of second inventor, if any     | Donald S. Bitting                             |   |
| Inventor's Signature                     | Donald I Path                                 |   |
| Date                                     | 64  |   |
| Residence                                | Reading, Pennsylvania 19607                   | _ |
| Citizenship                              | United States of America                      |   |
|  | 37 Rim View Lane, Reading, Pennsylvania 19607 |   |
| Full name of third join inventor, if any | nt<br>Robert M. Mininni                       |   |
| Inventor's Signature _                   |   |   |
| Date                                     |   |   |
| Residence                                | New Hope, Pennsylvania, 18938                 |   |
| Citizenship                              | United States of America                      |   |
| Post Office Address                      | 3161 Creamery Road, New Hope, PA 18938        |   |

98%

| •           | Full name of fourth joint inventor, if any Robert A. Norwood                         |
|-------------|--|
|             | Inventor's Signature   |
|             | Data   |
| Ī           | Residence West Chester, Pennsylvania 19380   |
| C           | Citizenship United States of America  Cost Office Address 114 W                      |
| P           | ost Office Address 114 Waterwillow Road, West Chester, Pennsylvania 19380            |
| 1:          | ull name of fifth joint nventor, if any <u>Kazuya Takayama</u>                       |
| ш           | venior's Signature   |
| Da          | sidence  |
| Re          | sidence Iwaki, FUKUSHIMA 971-8146, JAPAN   |
| Cit         | izenshipJapan  |
| Pos         | t Office Address 23-11 Kakizkai, Miyo, Kashima-mati, Iwaki, FUKUSHIMA 971-814  JAPAN |
| Full<br>inv | name of sixth joint ventor, if any Anthony F. Garito                                 |
| Inve        | entor's Signature  |
|             |  |
|             | denceRadnor, Pennsylvania 19087  |
|             | enshipUnited States of America   |
|             | Office Address 103 Rock Rose Lane, Radnor, Pennsylvania 19087                        |



Attorney Docket No. PHX-0038

# SUPPLEMENTAL DECLARATION AND POWER OF ATTORNEY (Original Application)

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

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## Polymer Optical Waveguides on Polymer Substrates

the specification of which is attached hereto and/or was filed on <u>7 November 2001</u> as Application No. <u>10/045,317</u>. I agree that all named inventors are in fact true inventors and are properly listed as such.

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|          |           |                        | Priority Claimed [] Yes [] No |
|----------|-----------|------------------------|-------------------------------|
| (Number) | (Country) | (Day/month/year filed) | •                             |
|          |           |                        | [] Yes [] No                  |
| (Number) | (Country) | (Day/month/year filed) |                               |

## PROVISIONAL PRIORITY PATENT APPLICATION(S)

|                   |               | Priority Claimed |
|-------------------|---------------|------------------|
|                   |               | [] Yes [] No     |
| (Application No.) | (Filing Date) |                  |
|                   |               | [] Yes [] No     |
| (Application No.) | (Filing Date) |                  |

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| Full name of sole inventor, if any    | Renyuan Gao                                   |
|---------------------------------------|---|
| Inventor's Signature _                |   |
| Date                                  |   |
| Residence                             | Downingtown, Pennsylvania 19335               |
| Citizenship                           | People's Republic of China                    |
| Post Office Address                   | 214 Montpelier Drive, Downingtown, PA 19335   |
| Full name of second jinventor, if any | oint  Donald S. Bitting                       |
| Inventor's Signature                  |   |
| Date                                  |   |
| Residence                             | Reading, Pennsylvania 19607                   |
| Citizenship                           | United States of America                      |
| Post Office Address                   | 37 Rim View Lane, Reading, Pennsylvania 19607 |
|                                       | Robert M. Mininni  Kolus M. Timera            |
|                                       |   |
|                                       | MAY 2004                                      |
|                                       | New Hope, Pennsylvania, 18938                 |
| Citizenship                           | United States of America                      |
| Dest Office Address                   | 3161 Creamery Road New Hope, PA 18938         |

| Full name of fourth joinventor, if any | nt Robert A. Norwood  |  |
|--|---|--|
| Inventor's Signature _                 |   |  |
|  |   |  |
|  | West Chester, Pennsylvania 19380                                    |  |
| Citizenship                            | United States of America  |  |
| Post Office Address                    | 114 Waterwillow Road, West Chester, Pennsylvania 19380              |  |
|  |   |  |
|  | Kazuya Takayama   |  |
| Inventor's Signature                   | ·   |  |
| Date                                   |   |  |
| Residence                              | Iwaki, FUKUSHIMA 971-8146, JAPAN                                    |  |
| Citizenship                            | Japan   |  |
| Post Office Address                    | 23-11 Kakizkai, Miyo, Kashima-mati, Iwaki, FUKUSHIMA 971-8146 JAPAN |  |
|  |   |  |
| Full name of sixth jo inventor, if any | Anthony F. Garito   |  |
| Inventor's Signature                   |   |  |
| Date                                   |   |  |
|  | Radnor, Pennsylvania 19087  |  |
| Citizenship                            | United States of America  |  |
| Post Office Address                    | 103 Rock Rose Lane, Radnor, Pennsylvania 19087                      |  |



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| Ot 1     | (0.1.)    |                        | Priority Claimed [] Yes [] No |
|----------|-----------|------------------------|-------------------------------|
| (Number) | (Country) | (Day/month/year filed) | [] Yes [] No                  |
| (Number) | (Country) | (Day/month/year filed) | [] = 15 [] = 10               |

#### PROVISIONAL PRIORITY PATENT APPLICATION(S)

|                       |               | Priority Claimed |
|-----------------------|---------------|------------------|
| <br>(Application No.) | (Filing Date) | [] Yes [] No     |
| <br>(A - 1 - 4 - N )  | (7)11         | [] Yes [] No     |
| (Application No.)     | (Filing Date) |                  |

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| inventor, if any                         | Renyuan Gao                                   | <del></del> |
|--|---|-------------|
| Inventor's Signature                     | •   |             |
| Date                                     |   |             |
| Residence                                | Downingtown, Pennsylvania 19335               |             |
| Citizenship                              | People's Republic of China                    |             |
| Post Office Address                      |   | _           |
| Full name of second inventor, if any     | joint  Donald S. Bitting                      |             |
| Inventor's Signature                     |   |             |
| Date                                     |   | <del></del> |
| Residence                                | Reading, Pennsylvania 19607                   |             |
| Citizenship                              | United States of America                      |             |
| Post Office Address                      | 37 Rim View Lane, Reading, Pennsylvania 19607 | _           |
| Full name of third join inventor, if any | int  Robert M. Mininni                        | _           |
| Inventor's Signature                     |   | _           |
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| Post Office Address                      | 3161 Creamery Road, New Hope, PA 18938        | ·<br>       |

| inventor, if any                       | Robert A. Norwood  |
|--|--|
| Inventor's Signature                   | PX X   |
| Date                                   |  |
| Residence                              | West Chester, Pennsylvania 19380                                       |
| Citizenship                            | United States of America   |
| Post Office Address                    | 114 Waterwillow Road, West Chester, Pennsylvania 19380                 |
| Full name of fifth jo inventor, if any | int<br>Kazuya Takayama   |
| Inventor's Signature                   |  |
| Date                                   |  |
|  | Iwaki, FUKUSHIMA 971-8146, JAPAN                                       |
| Citizenship                            | Japan  |
| Post Office Address                    | 23-11 Kakizkai, Miyo, Kashima-mati, Iwaki, FUKUSHIMA 971-8146<br>JAPAN |
| Full name of sixth jo inventor, if any | int Anthony F. Garito  |
| Inventor's Signature                   |  |
| Date                                   | •  |
| Residence                              | Radnor, Pennsylvania 19087   |
| Citizenship                            | United States of America   |
| Post Office Address                    | 103 Rock Rose Lane, Radnor, Pennsylvania 19087                         |



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(Original Application)

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| inventor, if any                       | Renyuan Gao                                   |
|--|---|
| Inventor's Signature                   | · · · · · · · · · · · · · · · · · · ·         |
| Date                                   |   |
|  | Downingtown, Pennsylvania 19335               |
|  | People's Republic of China                    |
| Post Office Address                    | 214 Montpelier Drive, Downingtown, PA 19335   |
| Full name of second j inventor, if any | oint  Donald S. Bitting                       |
| Inventor's Signature                   |   |
| Date                                   |   |
| Residence                              | Reading, Pennsylvania 19607                   |
| Citizenship                            | United States of America                      |
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| ·                                      | nt <b>Robert M. Mininni</b>                   |
| Date                                   |   |
| Residence                              | New Hope, Pennsylvania, 18938                 |
| Citizenship                            | United States of America                      |
| Post Office Address                    | 3161 Creamery Road, New Hope, PA 18938        |

| Full name of fourth jointentor, if any  | oint  Robert A. Norwood  |
|---|--|
| Inventor's Signature                    |  |
| Date                                    |  |
| Residence                               | West Chester, Pennsylvania 19380                                       |
| Citizenship                             | United States of America   |
| Post Office Address                     | 114 Waterwillow Road, West Chester, Pennsylvania 19380                 |
| Full name of fifth joi inventor, if any | nt<br>Kaznya Takayama  |
| Inventor's Signature                    | Kazeza Tekgom  |
| Date                                    | Feb. 28, 2004  |
| Residence                               | Iwaki, FUKUSHIMA 971-8146, JAPAN                                       |
| Citizenship                             | Japan  |
| Post Office Address                     | 23-11 Kakizkai, Miyo, Kashima-mati, Iwaki, FUKUSHIMA 971-8146<br>JAPAN |
| Full name of sixth jo inventor, if any  | int Anthony F. Garito  |
| Inventor's Signature                    |  |
| Date                                    | •  |
| Residence                               | Radnor, Pennsylvania 19087   |
| Citizenship                             | United States of America   |
| Post Office Address                     | 103 Rock Rose Lane, Radnor, Pennsylvania 19087                         |

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#### SUPPLEMENTAL DECLARATION AND POWER OF ATTORNEY

(Original Application)

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

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|----------|-----------|------------------------|--------------|
| (Number) | (Country) | (Day/month/year filed) | [] Yes [] No |

#### PROVISIONAL PRIORITY PATENT APPLICATION(S)

|                   |               | Priority Claimed |
|-------------------|---------------|------------------|
|                   |               | [] Yes [] No     |
| (Application No.) | (Filing Date) |                  |
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| (Application No.) | (Filing Date) |                  |

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| Full name of sole inventor, if any      | Renyuan Gao                                   |  |
|---|---|--|
| Inventor's Signature                    | · · · · · · · · · · · · · · · · · · ·         |  |
| Date                                    |   |  |
|   | Downingtown, Pennsylvania 19335               |  |
|   | People's Republic of China                    |  |
| Post Office Address                     |   |  |
| Full name of second inventor, if any    | joint  Donald S. Bitting                      |  |
| Inventor's Signature                    |   |  |
| Date                                    |   |  |
| Residence                               | Reading, Pennsylvania 19607                   |  |
| Citizenship                             | United States of America                      |  |
| Post Office Address                     | 37 Rim View Lane, Reading, Pennsylvania 19607 |  |
| Full name of third joi inventor, if any | nt<br>Robert M. Mininni                       |  |
| Inventor's Signature                    |   |  |
|   |   |  |
| Residence                               | New Hope, Pennsylvania, 18938                 |  |
| Citizenship                             | United States of America                      |  |
| Post Office Address                     | 3161 Creamery Road, New Hope, PA 18938        |  |

| inventor, if any                        | Robert A. Norwood  |
|---|--|
| Inventor's Signature                    |  |
| Date                                    |  |
|   | West Chester, Pennsylvania 19380                                       |
| Citizenship                             | United States of America   |
| Post Office Address                     | 114 Waterwillow Road, West Chester, Pennsylvania 19380                 |
| Full name of fifth joi inventor, if any | nt<br>Kazuya Takayama  |
| Inventor's Signature                    |  |
| Date                                    |  |
|   | Iwaki, FUKUSHIMA 971-8146, JAPAN                                       |
| Citizenship                             | Japan  |
| Post Office Address                     | 23-11 Kakizkai, Miyo, Kashima-mati, Iwaki, FUKUSHIMA 971-8146<br>JAPAN |
|   | Anthony F. Garito  |
|   | A.F. Gto   |
| Date <u>0226</u>                        | 04   |
| Residence                               | Radnor, Pennsylvania 19087   |
| Citizenship                             | United States of America   |
| Post Office Address                     | 103 Rock Rose Lane, Radnor, Pennsylvania 19087                         |

I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING DEPOSITED WITH THE UNITED STATES SERVICE WITH SUFFICIENT POSTAGE AS FIRST/CLASS MAIL IN AN ENVELOPE ADDRESSED STANT COMMISSIONER FOR PATENTS, P.O. BOX 1459, ALEXANDRIA, VA 22313-1450 ON

BETH JOHNSON

MAIL STOP: PETITIONS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Renyuan GAO et al.

Serial No.: 10/045,317

Group Art Unit: 2874

Filed:

7 November 2001

: Examiner: Sung H. Pak

For: POLYMER OPTICAL WAVEGUIDES ON:

POLYMER SUBSTRATES

: Attorney Docket No.: PHX-0038

## CONSENT OF ASSIGNEE TO CORRECT INVENTORSHIP

Photon-X, LLC, the Assignee of the above-referenced patent application ("the application"), hereby consents to the correction of inventorship of the application, adding Anthony F. Garito as a co-inventor. Photon-X, LLC is the present Assignee of the application, as evidenced by the enclosed Assignment documents, in which the originally listed inventors assigned all rights to Photon-X, Inc.; and in which Photon-X, Inc. assigned all rights to Photon-X, LLC.

Anthony F. Garito

President/CEO



#### SCHEDULE A

#### ISSUED UNITED STATES PATENTS

|            |          | *               |  |
|------------|----------|-----------------|--|
| Patent No. | Filing   | <u>Issuance</u> | Title  |
|            | Date     | Date            |  |
| 5,940,567  | 2/20/98  | 8/17/99         | Optical fibers having an inner core and an outer core  |
| 6,292,292  | 2/18/00  | 09/18/01        | Rare earth polymers, optical amplifiers and optical fibers   |
| D463,414   |          | 09/24/02        | Optical amplifier  |
| 6,473,551  | 11/28/01 | 10/29/02        | Thin film optical waveguides   |
| 6,483,978  | 6/8/01   | 11/19/02        | Compact optical amplifier module   |
| 6,507,430  | 6/25/01  | 01/14/03        | Long wavelength optical amplifier  |
| 6,538,805  | 11/28/00 | 03/25/03        | Codopant polymers for efficient optical amplification  |
| 6,574,393  | 11/27/01 | 06/03/03        | Compact optical fiber amplifier module   |
| D476,977   |          | 07/08/03        | Optical amplifier  |
| 6,603,597  | 6/8/01   | 08/05/03        | Dual mode programmable optical logarithmic amplifier driver  |
| 6,603,917  | 11/7/01  | 08/05/03        | Planar optical waveguide with core barrier   |
| 6,631,228  | 9/10/02  | 10/07/03        | The adhensive-free bonding method of fiber attachment for polymer optical waveguide on polymer substrate |
| 6,650,818  | 6/8/01   | 11/18/03        | Rare earth doped optical waveguide with optimal bending curves   |

#### PUBLISHED, BUT NOT ISSUED, UNITED STATES PATENTS

| <u>Publication</u> |             |   |
|--------------------|-------------|---|
| <u>No</u>          | Filing Date | Pub Date <u>Title</u>                                       |
|                    |             | Optical fiber transmission systems with suppressed light    |
| 20020081069        | 6/8/01      | 06/27/02 scattering   |
|                    |             | Integrated rare earth doped optical waveguide amplifier     |
| 20020186949        | 10/4/01     | 12/12/02 array  |
| 20020186458        | 6/8/01      | 12/12/02 Dynamically controlled optical amplifier module    |
|                    |             | Structure for attaching an optical fiber to a planar        |
| 20030035643        | 8/14/02     | 02/07/03 waveuide and method thereof                        |
| 20030031446        | 8/8/01      | 02/13/03 Freestanding athermal polymer optical waveguide    |
|                    |             | Method of fabricating polymer optical channel               |
| 20030026577        | 12/4/01     | 02/13/03 waveguides with multiple types of waveguide core   |
|                    |             | materials   |
| 20030063372        | 9/26/02     | 04/03/03 Long wavelength optical amplifier                  |
|                    |             | Tunable optical waveguide laser using rare earth            |
| 2003067945         | 10/9/02     | 04/10/03 dopants  |
| 20030068130        | 10/9/02     | 04/10/03 Dynamic gain equalization filters based on polymer |

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|             |         | optical waveguide gratings   |
|-------------|---------|--|
| 20030086679 | 11/7/01 | 05/08/03 Polymer optical waveguides on polymer substrate                                   |
|             |         | Optical polymer blends with adjustable refractive index                                    |
| 20030128956 | 3/25/02 | 07/10/03 and optical waveguides using same   |
| 20030133183 | 8/14/02 | 07/17/03 Ultra-bandwidth optical amplifier   |
| 20030174964 | 1/6/03  | 09/18/03 Lens coupling fiber attachment for polymer optical waveguide on polymer substrate |
| 20030202770 | 1/3/03  | 10/30/03 Optical waveguide amplifier   |

# PUBLISHED INTERNATIONAL PATENT APPLICATIONS

| Intl Pub No    | Filing Date | Pub Date   | <u>Title</u>   |
|----------------|-------------|--|--|
|                |             |  | Rare earth polymers, optical amplifiers and optical        |
| WO 01/61797    | 3/8/00      | 08/23/01   | fibers   |
|                |             |  | Rare earth polymers, optical amplifiers and optical        |
|                |             |  | fibers   |
|                |             |  | Rare earth polymers, optical amplifiers and optical fibers |
|                |             |  | Codopant polymers for efficient optical                    |
| WO 01/61803    | 2/16/01     | 08/23/01   | amplification  |
|                |             | VG/25/VI   | Codopant polymers for efficient optical                    |
|                |             |  | amplification  |
|                |             |  | Codopant polymers for efficient optical                    |
|                |             |  | amplification  |
|                |             |  | Codopant polymers for efficient optical                    |
|                |             |  | amplification  |
| - WO 01/61802  | 2/16/01     | 08/23/01   | Polymer blends for optical amplification                   |
| ∵WO 02/44775   | 11/28/01    | 06/06/02   | Thin film optical waveguides                               |
|                |             |  | Thin film optical waveguides                               |
|                |             |  | Thin film optical waveguides                               |
|                |             |  | Thin film optical waveguides                               |
| - WO 02/069528 | 2/20/02     | 09/06/02   | Long wavelength optical amplifier                          |
|                |             |  | Optical fiber transmission systems with suppressed         |
| WO 02/069529   | 11/2/01     | 09/06/02   | light scattering   |
|                |             |  | High gain rare earth doped phosphate glass optical         |
| WO 02/097487   | 11/27/01    | Height, 1900 Highle Stein, die Prite   | amplification fibers                                       |
| - WO 02/101431 | 6/6/02      | 12/19/02   | Compact optical amplifier module                           |
|                |             |  | Dual mode programmable optical logarithmic                 |
| WO 02/101890   | 6/6/02      | 12/19/02   | amplifier driver   |
| WOOLENIED      |             | The state of the s | Integrated rare earth doped optical waveguide              |
| WO 02/101891   | 6/6/02      | The state of the state of  | amplifier array  |
| WO 02/101892   | 6/6/02      | 12/19/02   | Dynamically controlled optical amplifier module            |

GY:#268547 v2(sR7N021.DOC)

# ASSIGNMENT OF PATENTS AND PATENT APPLICATIONS

THIS ASSIGNMENT OF PATENTS AND PATENT APPLICATIONS ("Patent Assignment"), is made this 31 day of December, 2003, by PHOTON-X, INC., a Pennsylvania corporation (the "Assignor"), for the benefit of PX ACQUISITION, LLC, a Delaware limited liability company (the "Assignee").

#### **BACKGROUND**

Pursuant to an Asset Purchase Agreement, dated as of December 31, 2003 (the "Asset Purchase Agreement"), among Assignee, Assignor, Anthony F. Garito, Thomas MacAniff, Benjamin duPont and Jack Surgent, Assignee is acquiring substantially all of the assets and assuming certain of the liabilities of Assignor, and Assignor has agreed to make the assignments set forth herein.

NOW THEREFORE, in consideration of the foregoing and for good and valuable consideration set forth in the Asset Purchase Agreement, the receipt and sufficiency of which is hereby acknowledged, intending to be legally bound hereby, Assignor agrees as follows:

- A. Assignor hereby irrevocably sells, assigns and transfers unto Assignee:
- applications listed on Schedule A attached hereto, including all corresponding United States and foreign patents and legal equivalents thereof (such as registrations, utility models, design patents, inventor's certificates and the like), and to all patents, continuations, divisions, registrations and renewals or any reissue or reexamination resulting therefrom (hereinafter "Rights"), including the right to claim priority from, or divided out of, the Rights;
  - 2. the inventions described in the Rights; and
- all claims for damages by reason of past infringement of the Rights, with the right to sue for and collect the same for its own use and enjoyment, and for use and enjoyment of its successors, assigns or other legal representatives.
- B. Assignor hereby covenants that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this Assignment.
- C. Assignor further covenants that Assignee will, upon its request, be provided promptly with all pertinent facts and documents relating to Rights and will testify as to the same in any interference, litigation or proceeding relating thereto and will promptly execute and deliver to Assignee any and all papers, instruments or affidavits required to perfect title to, record assignment of, apply for, obtain, maintain, issue and enforce said Rights.
  - D. This Assignment shall inure to the benefit of Assignee and the successors and

GV: #268547 v2 (5R7N02!.DOC)

IN WITNESS WHEREOF, Assignor has executed this Assignment of Patents and Patent Applications as of the date first above written.

PHOTON-X, INC., a Pennsylvania corporation

Name: Anders Olsson

Title: President & CEO

STATE OF Pa.

COUNTY OF Chester

On this, the 3 day of Dec., 2003, before me Donna Hunter the undersigned officer, personally appeared Anderso Olason, who acknowledged himself to be the Possiblent & CEO of Photon-X, Inc., and that he as such officer, being authorized to do so, executed the foregoing instrument for the purposes therein contained on behalf of said corporation and with its full authority to do so.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Notary Public

Notated Seel

Donna M. Humer, Notary Public

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Redyfrin Two, Chester County

My Commission Repired Aug. 8, 2004

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| the state of the s |                                     |  |
|--|-------------------------------------|--|
| WO 02/103419   | 11/27/01                            | 12/27/02 Compact optical fiber amplifier module  |
|  |                                     | System and method for the electronic control of a  |
| WO 03/012942   | 8/5/02                              | 02/13/03 laser diode and themoelectric cooler  |
|  |                                     | System and method for the electronic control of a  |
|  |                                     | laser diode and themoelectric cooler   |
|  |                                     | Structure for attaching an optical fiber to a planar   |
| WO 03/016968   | 8/18/02                             | 02/27/03 waveguide and method thereof  |
| WO 03/018592   | 8/26/02                             | 03/06/03 Optical gain media  |
| WO 03/025644   | 9/16/02                             | 03/27/03 Athermal polymer optical waveguide on polymer substrate   |
|  |                                     | The adhensive-free bonding method of fiber   |
| WO03/025642  | 9/13/02                             | 03/27/03 attachment for polymer optical waveguide on   |
|  |                                     | polymer substrate  |
| WO03/040789  | 11/6/02                             | 05/15/03 Polymer optical waveguides on polymer substrates  |
| WO 03/044569   | 11/18/02                            | 05/30/03 L-band optical amplier  |
| WO 03/044568   | 11/18/02                            | 05/30/03 Optical amplifier with gain flattening filter   |
|  |                                     | a tabuta kanti kalaksa kanti kunda ilim na lalikar kila zamba a tin da aki ilaki milaki wi ilimi   |
| WO 03/057774   | 1/7/03                              | 07/17/03 Optical polymer blends with adjustable refractive index and optical waveguides using same   |
| WA 02/02/02  |                                     |  |
| WO 03/058288   | 1/6/03                              | 07/17/03 Lens coupling floer attachment for polymer optical wavseguide on polymer substrate  |
| WO 03/058368   | 1/8/03                              | 07/17/03 Temperature controller module   |
| WO 03/058776   | 1/8/03                              | 07/17/03 Optical waveguide amplifiers  |
| WO 03/066715   | 2/7/03                              | 08/14/03 Nanoporous random glassy polymers   |
| WO 03/070817   | 2/19/03                             | 08/28/03 Athermal polymer nanocomposites   |
| WO 03/079099   | 3/17/03                             | 09/25/03 Magneto-optic nanocomposites  |
| WO 03/079070   | 3/17/03                             | 09/25/03 Integrated optical waveguide structures   |
| WO 03/078304   | 3/17/03                             | 09/25/03 Surface relief structures for joining and adhesion  |
|  |                                     | Surface relief structures for joining and adhesion   |
| WO 03/079414   | 3/17/03                             | 09/25/03 Optical polymer nanocomposite substrates with surface relief structures   |
| WO 03/082884   | 8/26/02                             | 10/09/03 Halogenated phosphinic acids and their active metal   |
|  |                                     | Halogenated phosphinic acids and their active metal derivatives  |
| WO 03/082969   | 3/25/03                             | 10/09/03 Anti-glare polymer  |
|  |                                     | Anti-glare polymer   |
|  |                                     |  |
| WO 03/085432   | 4/4/03                              | 10/16/03 Eligitace preparation method for polymer optical waveguides on polymer substrates   |
|  |                                     | Endface preparation method for polymer optical   |
|  |                                     | waveguides on polymer substrates   |
| Harry At and proper line to the  | n den die der den die Gelder (1925) | · 27年222月4日 20年4月1日 日本 - 1871年 - 1885年 - |

# $\frac{\text{FILED, BUT NEITHER PUBLISHED NOR ISSUED, UNITED STATES PATENT}}{\text{\underline{APPLICATIONS}}}$

| App. No.           | Filing Date Title   |
|--------------------|---|
| Provisional        | 09/18/00 Hybrid glass/ polymer integrated waveguide amplifiers  |
| 09/722,282         | 11/28/00 Polymer blends for optical amplification   |
| 09/888,881         | 06/25/01 Long wavelength optical amplifier  |
|                    | Method and apparatus of fabricating graded index optical fiber  |
| 60/331,758         | 11/19/01 preforms   |
|                    | High gain rare earth doped phosphate glass optical amplification  |
| 09/993,775         | 11/27/01 fibers   |
| 60/364,699         | 03/15/02 Athermal optical device  |
| 60/382,414         | 05/21/02 Polycarbonate U-channel  |
| PCT/US<br>02/17731 | 06/06/02 Integrated rare earth doped optical waveguide amplifier array  |
|                    | Fluorinated and halogenated phosphinic acids and their active metal   |
| 10/227,301         | 08/26/02 derivatives  |
| 10/299,471         | 11/18/02 Dynamic gain flattening filter   |
| PCT/US03/0036<br>4 | 01/08/03 Optical waveguide amplifier  |
| PCT/US03/0518      |   |
| PCT/US03/0263<br>6 | 01/30/03 Nanocomposite resonators   |
| 10/364,413         | 02/12/03 Halogenated monomers and polymers and process for making same  |
| PCT/US03/0469<br>6 | 02/19/03 Optical polylmer nanocomposites  |
|                    | Opitcal polymer nanocomposite substrates with surface relief  |
| 60/364,865         | 03/17/03 structures   |
|                    | Opitcal polymer nanocomposite substrates with surface relief  |
| 60/430,043         | 03/17/03 structures   |
| Provisional        | 03/24/03 Clip-on mutilfunctional integrated optical circuits  |
| Provisional        | 05/02/03 Optical waveguide amplifier having high dynamic range  |
| Provisional        | 05/16/03 Polymer nanocomposite optical absorbing layers   |
| 60/380,920         | 05/16/03 Broadband optical amplifier based on Cr4÷ polymer nanocomposite  |
| 10///1 000         | Cr4+:YAG crystal strip loaded optical waveguide amplifier for   |
| 10/441,030         | 05/20/03 broadband optical amplification  |
| PCT/US03/1566      | ,   |
| /                  | 05/20/03 broadband optical amplification  |
| 10/447,144         | Cr4÷:YAG single crystal optical waveguide amplifiers for 05/29/03 broadband optical amplification around 1310nm |



State of Delaware Secretary of State Division of Corporations Delivered 10:32 AM 01/09/2004 FILED 09:31 AM 01/09/2004 SRV 040016171 - 3742087 FILE

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#### CERTIFICATE OF AMENDMENT

**OF** 

#### PX ACQUISITION, LLC

FIRST:

The name of the limited liability company is PX Acquisition,

LLC.

SECOND:

The Certificate of Formation of the limited liability company

is hereby amended as follows:

The name of the limited liability company is Photon-X, LLC.

THIRD:

This Certificate of Amendment shall be effective when filed.

IN WITNESS WHEREOF, the undersigned has executed this Certificate of Amendment of PX Acquisition, LLC this 7th day of January, 2003

Anthony F. Garito, Manager

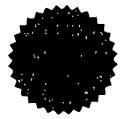
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# Delaware PAGE 1

# The First State

I, HARRIET SMITH WINDSOR, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF AMENDMENT OF "PX ACQUISITION, LLC", CHANGING ITS NAME FROM "PX ACQUISITION, LLC" TO "PHOTON-X, LLC", FILED IN THIS OFFICE ON THE NINTH DAY OF JANUARY, A.D. 2004, AT 9:31 O'CLOCK A.M.



AUTHENTICATION: 2860926

97%

DATE: 01-09-04

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